

**WHAT IS CLAIMED IS:****1. An image reader, comprising:**

a plurality of photoelectric transducers each of which converts a light signal received from an image, into an electric signal, and includes an output portion which outputs the electric signal to a signal line common to the photoelectric transducers;

a plurality of channel selecting switches each of which is connected to a corresponding one of the photoelectric transducers and selectively connects, and disconnects, the output portion of said one photoelectric transducer to, and from, the signal line; and

a resolution selecting portion which receives, from an external device, (a) a control-start signal which commands the image reader to start controlling the channel selecting switches, and continues to take a predetermined voltage in a first predetermined time duration, and (b) each one of a plurality of clock-pulse signals which have respective different numbers of characteristic portions or portion in a second predetermined time duration falling in the first time duration, and said each of which has a plurality of pulses in a third time duration following the second time duration, the channel selecting switches being sequentially controlled in synchronism with the pulses of said each clock-pulse signal in the third time duration, so as to sequentially connect, and disconnect, the respective output portions of the corresponding photoelectric transducers to, and

from, the signal line,

the resolution selecting portion selecting, based on the number of characteristic portions or portion of said each clock-pulse signal, a corresponding one of a plurality of different reading resolutions corresponding to a plurality of different control patterns, respectively, so that the channel selecting switches are sequentially controlled according to the control pattern corresponding to the selected reading resolution, in synchronism with the pulses of said each clock-pulse signal in the third time duration.

2. The image reader according to claim 1, wherein the clock-pulse signals comprise a primary clock-pulse signal having a first number of characteristic portions or portion in the second time duration falling in the first time duration in which the control-start signal continues to take a first predetermined voltage as the predetermined voltage, so as to inhibit the image reader from controlling the channel selecting switches, and having the first number of characteristic portions or portion in each of a plurality of unit times in the third time duration in which the control-start signal continues to take a second predetermined voltage, so as to allow the image reader to control the channel selecting switches, a length of said each unit time being equal to a length of the second time duration; and at least one secondary clock-pulse signal having a second number of characteristic portions in the second time duration, and having the first number of characteristic portions or portion in said each

unit time in the third time duration, the second number being greater than the first number.

3. The image reader according to claim 2, wherein the primary clock-pulse signal comprises a first periodic signal having a first period in each of the second and third time durations, and said at least one secondary clock-pulse signal comprises at least one second periodic signal having the first period in the second time duration and a second period in the first time duration, the second period being shorter than the first period.

4. The image reader according to claim 3, wherein the second period is obtained by dividing the first period by an integral number.

5. The image reader according to claim 2, wherein each of the primary clock-pulse signal and said at least one secondary clock-pulse signal is produced based on a reference clock-pulse signal.

6. The image reader according to claim 5, wherein the control-start signal is produced based on the reference clock-pulse signal.

7. The image reader according to claim 1, wherein the second predetermined time duration is shorter than

the first predetermined time duration.

8. The image reader according to claim 1, further comprising a plurality of shift registers which control, according to the control pattern corresponding to the reading resolution selected by the resolution selecting portion, the channel selecting switches, so that the channel selecting switches sequentially connect, and disconnect, the respective output portions of the corresponding photoelectric transducers to, and from, the signal line.

9. The image reader according to claim 1, wherein the resolution selecting portion selects said one reading resolution based on a number of pulses or pulse of said each clock-pulse signal that occur or occurs in the second time duration falling in the first time duration in which the control-start signal continues to take the predetermined voltage.

10. The image reader according to claim 1, wherein each time the image reader reads one of a plurality of lines in the image, the resolution selecting portion selects one of the reading resolutions.

11. The image reader according to claim 8, wherein the channel selecting switches comprise a plurality of groups of channel selecting switches, and wherein when the resolution selecting portion selects one of the reading resolutions,

such that the selected reading resolution is not a highest one of the reading resolutions, the shift registers sequentially control, according to the control pattern corresponding to the selected reading resolution, the groups of channel selecting switches, such that each group of channel selecting switches simultaneously connect, and disconnect, the corresponding photoelectric transducers to, and from, the signal line.

12. The image reader according to claim 1, further comprising a confirmation-signal producing portion which produces a resolution confirmation signal representing the reading resolution selected by the resolution selecting portion, and outputs the resolution confirmation signal to the signal line.

13. The image reader according to claim 12, wherein the confirmation-signal producing portion outputs the resolution confirmation signal to the signal line, before the channel selecting switches are controlled, according to the control pattern corresponding to the selected reading resolution, to sequentially connect, and disconnect, the respective output portions of the corresponding photoelectric transducers to, and from, the signal line.

14. The image reader according to claim 1, wherein in the first time duration in which the control-start signal continues to take the predetermined voltage, the channel selecting switches are not controlled to connect, and disconnect,

the respective output portions of the corresponding photoelectric transducers to, and from, the signal line.

15. An image reading apparatus, comprising:  
an image reader including

a plurality of photoelectric transducers each of which converts a light signal received from an image, into an electric signal, and includes an output portion which outputs the electric signal to a signal line common to the photoelectric transducers;

a plurality of channel selecting switches each of which is connected to a corresponding one of the photoelectric transducers and selectively connects, and disconnects, the output portion of said one photoelectric transducer to, and from, the signal line; and

a resolution selecting portion which receives, from an external device, (a) a control-start signal which commands the image reader to start controlling the channel selecting switches, and continues to take a predetermined voltage in a first predetermined time duration, and (b) each one of a plurality of clock-pulse signals which have respective different numbers of characteristic portions or portion in a second predetermined time duration falling in the first time duration, and said each of which has a plurality of pulses in a third time duration following the second time duration,

the channel selecting switches being sequentially controlled in synchronism with the pulses of said each clock-pulse signal in the third time duration, so as to sequentially connect,

and disconnect, the respective output portions of the corresponding photoelectric transducers to, and from, the signal line,

the resolution selecting portion selecting, based on the number of characteristic portions or portion of said each clock-pulse signal, a corresponding one of a plurality of different reading resolutions corresponding to a plurality of different control patterns, respectively, so that the channel selecting switches are sequentially controlled according to the control pattern corresponding to the selected reading resolution, in synchronism with the pulses of said each clock-pulse signal in the third time duration;

a control-start-signal outputting portion which outputs the control-start signal to the image reader; and

a clock-pulse-signal outputting portion which selects, based on each one of the reading resolutions that is to be indicated to the image reader, a corresponding one of the clock-pulse signals, and outputs the selected clock-pulse signal to the image reader.

16. The image reading apparatus according to claim 15, wherein the clock-pulse signals comprise a primary clock-pulse signal having a first number of characteristic portions or portion in the second time duration falling in the first time duration in which the control-start signal continues to take a first predetermined voltage as the predetermined voltage, so as to inhibit the image reader from controlling the channel selecting

switches, and having the first number of characteristic portions or portion in each of a plurality of unit times in the third time duration in which the control-start signal continues to take a second predetermined voltage, so as to allow the image reader to control the channel selecting switches, a length of said each unit time being equal to a length of the second time duration; and at least one secondary clock-pulse signal having a second number of characteristic portions in the second time duration, and having the first number of characteristic portions or portion in said each unit time in the third time duration, the second number being greater than the first number.

17. The image reading apparatus according to claim 15, wherein the clock-pulse-signal outputting portion selects, based on a first reading resolution of the reading resolutions that is to be indicated to the image reader, a primary clock-pulse signal of the clock-pulse signals that has a first number of characteristic portions or portion in each of the second time duration in which the control-start signal continues to take a first predetermine voltage as the predetermined voltage, and each of a plurality of unit times in the third time duration in which the control-start signal continues to take a second predetermined voltage, a length of said each unit time being equal to a length of the second time duration, and wherein the clock-pulse-signal outputting portion selects, based on a second reading resolution of the reading resolutions that is to be indicated to the image reader, a secondary clock-pulse signal of



the clock-pulse signals that has a second number of characteristic portions in the second time duration, and has the first number of characteristic portions or portion in said each unit time in the third time duration.

18. The image reading apparatus according to claim 15, wherein the clock-pulse-signal outputting portion comprises:

a clock-pulse-signal producing portion which produces the clock-pulse signals having the different numbers of characteristic portions or portion in the second time duration, respectively; and

a clock-pulse-signal selecting portion which selects, based on said each reading resolution to be indicated to the image reader, said one clock-pulse signal, and outputs the selected clock-pulse signal to the image reader.

19. The image reading apparatus according to claim 18, wherein the clock-pulse-signal producing portion produces each one of the clock-pulse signals by dividing a frequency of a reference pulse signal by an integral number.

20. A method of setting a reading resolution in an image reader including a plurality of photoelectric transducers each of which converts a light signal received from an image, into an electric signal, and includes an output portion which outputs the electric signal to a signal line common to the photoelectric

transducers, and a plurality of channel selecting switches each of which is connected to a corresponding one of the photoelectric transducers and selectively connects, and disconnects, the output portion of a corresponding one of the photoelectric transducers to, and from, the signal line, the method comprising the steps of:

receiving, from an external device, (a) a control-start signal which commands the image reader to start controlling the channel selecting switches, and continues to take a predetermined voltage in a first predetermined time duration, and (b) each one of a plurality of clock-pulse signals which have respective different numbers of characteristic portions or portion in a second predetermined time duration falling in the first time duration, and said each of which has a plurality of pulses in a third time duration following the second time duration, the channel selecting switches being sequentially controlled in synchronism with the pulses of said each clock-pulse signal in the third time duration, so as to sequentially connect, and disconnect, the respective output portions of the corresponding photoelectric transducers to, and from, the signal line, and

selecting, based on the number of characteristic portions or portion of said each clock-pulse signal, a corresponding one of a plurality of different reading resolutions corresponding to a plurality of different control patterns, respectively, so that the channel selecting switches are sequentially controlled according to the control pattern corresponding to the selected reading resolution, in synchronism with the pulses of said each clock-pulse signal in the third time

duration.

21. The method according to claim 20, wherein the clock-pulse signals comprise a primary clock-pulse signal having a first number of characteristic portions or portion in the second time duration falling in the first time duration in which the control-start signal continues to take a first predetermined voltage as the predetermined voltage, so as to inhibit the image reader from controlling the channel selecting switches, and having the first number of characteristic portions or portion in each of a plurality of unit times in the third time duration in which the control-start signal continues to take a second predetermined voltage, so as to allow the image reader to control the channel selecting switches, a length of said each unit time being equal to a length of the second time duration; and at least one secondary clock-pulse signal having a second number of characteristic portions in the second time duration, and having the first number of characteristic portions or portion in said each unit time in the third time duration, the second number being greater than the first number.

22. The method according to claim 20, wherein the image reader further comprises a plurality of shift registers which control, according to the control pattern corresponding to the reading resolution selected based on said each clock-pulse signal, the channel selecting switches, so that the channel selecting switches sequentially connect, and disconnect, the

respective output portions of the corresponding photoelectric transducers to, and from, the signal line.

23. The method according to claim 20, wherein the step of selecting said one reading resolution comprises selecting said one reading resolution based on a number of pulses or pulse of said each clock-pulse signal that occur or occurs in the second time duration in which the control-start signal continues to take the predetermined voltage.

24. The method according to claim 20, wherein the step of selecting said one reading resolution comprises selecting, each time the image reader reads one of a plurality of lines in the image, one of the reading resolutions.